Bulletin *of the* Green Section *of the* U. S. Golf Association

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A MONTHLY PERIODICAL TO PROMOTE THE BETTERMENT OF GOLF COURSES

CONTENTS.

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Greencommitteemen

What are the qualifications of the individual which should govern in the selection of the chairman or active member of the green committee? A questionnaire on this would probably receive as varied an assortment of replies as the one on "equipment needed for a golf course." Certainly it can not be said that the product is standardized. Judging from a somewhat limited observation, two factors are largely responsible for the chairmen of the green committees being in those positions.

1. The chairman is a good golfer and popular with the members; and surely the good golfer should take an interest in having the course in first-class condition.

2. He has a large direct or indirect financial interest in the club. And who should be more interested in its welfare than the man who has put up his good money to bring it into existence?

From an abstract point of view, the chairman of the green committee should be familiar with golf course maintenance, know how to grow grass, what kind of fertilizers to use, when to mow, how to dress the greens, and the fifty-seven other varieties of details connected with greenkeeping. As an additional qualification he should be so constituted mentally that he can derive keen enjoyment out of the knocks of the criticism committee.

It is not the purpose here to elaborate on the value of such an individual. The club that is the fortunate possessor of a member of such parts either has him on the job or there is some valid personal reason for the oversight.

Leaving out of the discussion all supermen and chairmen of green committees who have demonstrated their fitness, let us consider what the newly-organized club and the club that needs to make a change should look for in this important personage.

We should suggest that the most important of all qualifications is the man's willingness to spend the time and energy to study and learn the details of golf course management. As proof of this let us cite one concrete instance out of several which have come to the attention of the Green Section.

A certain club in the early spring of 1922 found it advisable to make a change in the personnel of its green committee. A former member of the house committee was selected. He was a green committeeman in every sense of the term—city raised and without practical experience in the upkeep of a golf course. His club handicap was seven, and needless to say he enjoyed playing the game. This man immediately set out in search of knowledge which might be helpful to him. The first source of information tapped was an old established seed house. He asked their advice as to the best printed work on grasses and was referred to Flint's "Grasses and Forage Plants." As this publication may not be familiar to all it may be noted that it was published about the time that hooped skirts were coming into style. To be exact, the title page bears the imprint of 1858. Flint's "Grasses" gives the analyses of many common hay plants and is illustrated with pictures of the flowering parts of seed heads of the various plants discussed. Our committeeman lost sleep for several nights trying to figure out how to know from chemical analysis what grasses to use on a golf course. He was also puzzled as to how to learn the names of the grasses on his course without letting them go to seed.

His second journey in this quest for knowledge proved more fortunate than the first. He attended a meeting of his district green section and became acquainted with the experienced greenkeepers and greencommit-

teemen of his locality. He heard discussed many of the problems which confronted him. These men he found were willing to give him the benefit of their experience. He also became acquainted with the work of the Green Section of the United States Golf Association and initiated a correspondence which now fills about an inch of space in a vertical filing case.

With the assistance of a representative of the Green Section he took up patches of creeping bent found growing on his course and planted a nursery. This nursery was well tended; and woe befell the hapless player who sliced a ball into it. Within a year from the time this nursery was first planted seven greens were rebuilt after the specifications of a competent architect and planted by the vegetative method. During the year nineteen carloads of mushroom soil were purchased and spread over the fairways. A compost pile was started which should prove ample for the needs of the course. All of this was done and the usual upkeep of the course carried out at an expenditure of $2,000 less than the customary cost of maintaining the course. This financial saving was due partly to cooperation with his greenkeeper (a man who had been on the course for years) in the more economical utilization of labor, but principally to the saving of $5,000, which had been the usual annual expenditure for seed on this course.

Some will say that this is an unusual case; and it is, most decidedly. But the exceptional feature is the willingness of this man to study his business and profit by the information which is available to every greencommitteeman who desires it.

"Creeping Bent Seed"—a Misnomer.—It has come to our notice that some seedsmen are using the term "creeping bent seed" in correspondence concerning the seed of German mixed bent. While it is true that there is a small proportion of creeping bent seed in the bent seed mixture coming from Germany, the fact should not be lost sight of that only an exceedingly small number of plants of true creeping bent, a species possessing the creeping habit in sufficient degree to be of value as a creeping grass, will be obtained from sowings of German mixed bent seed. These usually become noticeable first as small patches of fine uniform turf about two years after the sowing, the Rhode Island bent being slightly coarser than the creeping bent. Strains of creeping bent vary markedly in their turf-forming habit. Moreover, as pointed out in the second paragraph on page 213 of the August BULLETIN, "German mixed bent seed on a chaff-free other-seed-free basis is composed of approximately 85 per cent of seed of the species commonly known as Rhode Island or Colonial bent and approximately 15 per cent of the one commonly known as velvet bent, and in addition it has a *mere trace* of seed of creeping (or carpet) bent." *There is no straight seed of true creeping bent on the market;* and this should be borne in mind when negotiations are under way for "German creeping bent seed" or German mixed bent seed. There is also no straight seed of true velvet bent on the market.

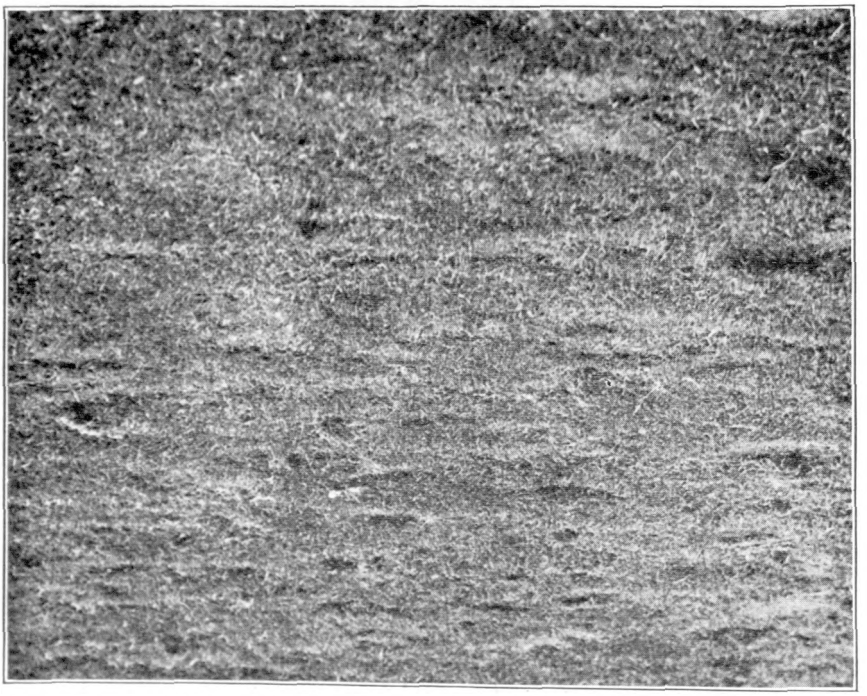
The only practicable method of establishing putting greens of straight creeping bent or velvet bent is by vegetative propagation, using selected strains for the purpose.

Rhode Island bent and velvet bent obtained from the German mixed bent seed are good putting green grasses, but they do not possess the pronounced spreading habit of creeping bent.

The Vicissitudes of the Grass Tee

By R. A. Oakley

Those who attended the Open Championship at Inwood this year doubtless noticed the condition of No. 12 tee after the first few days of play. It was a sight and a convincing bit of evidence that grass tees are not the easiest parts of the course to maintain. No. 12 at Inwood is a 108-yard hole, just a pitch to a small, well-trapped green with a water hazard in front. The green is banked to the shot, the upper half being somewhat of the nature of a terrace. When the cup is forward there is a distinct advantage to the player to be short rather than beyond it; therefore, the shots are played with all the bite possible. A glance at the accompanying illustration is all that is needed to convince one of the fact that No. 12 tee was literally cut to pieces during the week of the Open Tournament. The picture falls far short of doing justice to the scene. A divot ranging from three inches to a



Section of No. 12 tee at Inwood the second day of the finals of the Open Tournament, July 14, 1923. A glance at this is all that is needed to convince one of the difficulty of maintaining grass tees.

foot or more in length was taken at every shot. Only one player, so far as is known, held the view that such terrific divot-taking was unnecessary. He was a professional originally from abroad. He contended that the shot could be played quite as well by teeing the ball properly, and if this were done very little turf-taking would result. This professional seemed to be

the only one who had a heart. He must have been a greenkeeper at one time. Whether or not there is anything to his contention, is a matter for players to decide. The chief object of calling up the case is to instill into the minds of those who have not given the difficulty of upkeep of grass tees a moment's thought, a feeling of intelligent appreciation of what the greenkeeper is up against. Players should bear in mind that it is humanly impossible always to keep grass tees in good condition. They are subject to more wear than any other part of the course. Too frequently they are built up so that no reasonable amount of water will keep them from becoming exceedingly dry. They bake and burn regardless of the best attention the greenkeeper can give them. But grass tees are desirable. They are almost a necessity. And the greenkeeper must struggle along as best he can. There is, however, something that the club can do to help him. It can in most cases do away with its built-up tees. It can make available an abundant water supply so that the tees can be watered thoroughly. When needed, it can provide money for fertilizer and compost. Also, it can provide for the necessary labor to care for a replacement turf bed for patching. If the club does its part in these matters, the competent greenkeeper will give the members the best grass tees possible.

One green-committee chairman makes his tees with a bare area back of the tee plates, and grass back of that. He says the average player will tee up on the bare area for the advantage it gives him in distance. There may be something to his scheme.

Secrets of Success in Greenkeeping

By George Windsor*

Good greenkeeping is the mainstay of a golf course. May I point out what in my opinion are the secrets of success in greenkeeping?

Study.—At the present time, when the art of greenkeeping is in so rapid a stage of development, one of the most obvious needs is a good book on the subject. This need however is to a great extent being filled by The Bulletin of the Green Section, a publication which may be regarded as the eyes of the greenkeeper. It is an instrument through which it is hoped that the wastage of thousands of dollars being spent annually on golf courses without appreciable results being obtained, may be corrected. There is no excuse for ignorance.

Plan Your Work.—Use your head. Brain is more essential than brawn. Set your goal and strive to attain it. The most important part of every man's work in the world is done with his brains. A greenkeeper depends on his brains first to get him a job, and secondly to suggest quick or original methods of work so as to get him up in the world. The greenkeepers who get the most done and still seem to have the most time on their hands for other things are the ones who go at their work from a carefully mapped out plan. Time used in thinking out things the night before or at the beginning of each day, is time invested in advance.

Conserve Time and Energy.—Never waste time on things not neces-

*Greenkeeper, Friendship Golf Course, Washington, D. C.; late greenkeeper, Hanger Hill Golf Club, Ealny, London W., England.

sary. Do all that the job requires, and do it thoroughly. There is an easy way and a hard way. Seek the easy way, as it conserves your strength and eliminates danger of injury. Give your time to things that count. Some people are more or less wasters, and their employers are too blind to see it; they do their work from day to day but take twice the time necessary. Pick out the features of your work which are essential. A man will never count in this world unless he gives his time to things that count.

COOPERATION.—When people get together for cooperation, all that is good in the individuals is united, and the things aimed at are usually accomplished. Get together and stick together.

COURAGE.—You must love your work with an element of courage Greenkeeping, like every other business, has many obstacles in its way, and a golf course is often ruined by lack of courage on the part of the greenkeeper. Never entertain a thought that it is impossible to do anything. Find some way to accomplish it. The man who never makes a mistake never makes anything else. I have made mistakes, but have found them to be factors of improvement. When a young man leaves school he thinks he has left his work behind him; he does not realize that he has only laid the foundation until he runs into a terrible lot of bumps. Study your mistakes. No one ever gets too big to make mistakes. The secret is, that a man is greater than his mistakes because he can rise right out of them and pass beyond them. Though you may do your best each day, after your work is done you will realize that you have made blunders. Profit from them and go ahead. The greenkeeper has a great responsibility. Be responsible first to yourself. Responsibility starts with the babe in the cradle, and never ends. Convince yourself that you have worth and can prove it. The standard of excellence of a golf course is measured not when everything is going smoothly but when everything goes dead wrong. We must have things thoroughly mastered, so that we can smile when things go wrong.

INDUSTRY.—Desire always to do your best. Don't try to shirk your duty. Back of all the failures the truth is, neglect. The thing put off until tomorrow is rarely done. Tomorrow is what happened yesterday. The task finished is always done. Stick it out. Finish something, and finish as you go along. The task finished today with ragged edges is started tomorrow with ragged edges. The most important thing is always the task at hand. Complete it. Make it clean when you leave it. That is the only road to perfection. Start what you do start right, or else it means beginning all over again.

"Turfing fescue."—It has recently been called to our attention that meadow fescue is being exploited under the name "turfing fescue" for golf course purposes. On one course we visited the architect had specified meadow fescue for the rough, and the club had purchased a large quantity of the seed. It would be difficult to find among the common hay grasses one less suitable for such a purpose. We do not know of any use on a golf course for meadow fescue. It is a hay grass and valuable as such when used under proper conditions for its growth.—(EDITORS.)

The Maximum Golf-Playing Membership that a Club Should Have.

In response to an inquiry concerning the desirable number of members for a golf club, a questionnaire was sent in April of this year to all the Green Section clubs. The questions were as follows: How many holes has your course? What is the total club membership? Approximately how many members play golf on the course? Do you consider the number of golf players using the course too few, about right, or too large? From the answers received the following information is compiled.

	9-hole courses.	18-hole courses.	27-hole courses.	36-hole courses.
Number of clubs submitting answers	92	173	8	3
Average club membership	258	458	888	1,068
Minimum club membership	60	100	390	675
Maximum club membership	540	3,104	2,000	1,780
Percentage of playing membership to club membership:				
Average of all percentages	57	65	79	70
Minimum percentage reported	14	11	52	53
Maximum percentage reported	100	100	100	80
Number of clubs reporting maximum	7	8	2	
Clubs that find the playing membership too small:				
Percentage of such clubs to the number of clubs reporting	16	16	0	0
Average for such clubs of the percentage of playing membership to club membership	46	55		
Minimum percentage of playing membership to club membership	14	22		
Maximum percentage of playing membership to club membership	100	100		
Number of clubs reporting maximum	1	1		
Average club membership of the clubs reporting the playing membership too small	188	338		
Clubs that find the playing membership too large:				
Percentage of such clubs to the number of clubs reporting	20	14	0	33
Average for such clubs of the percentage of playing membership to club membership	54	75		53
Minimum percentage of playing membership to club membership	20	21		53
Maximum percentage of playing membership to club membership	80	100		53
Number of clubs reporting 100 per cent (maximum)		2		

Average club membership of clubs that find the playing membership too large	350	510		1,780
Clubs that find the playing membership about right:				
Percentage of such clubs to the number of clubs reporting	64	70	100	67
Average for such clubs of the percentage of playing membership to club membership	61	65	79	79
Minimum percentage of playing membership to club membership	20	11	52	78
Maximum percentage of playing membership to club membership	100	100	100	80
Number of clubs reporting 100 per cent maximum	6	5	2	
Average club membership of clubs that find the playing membership about right	248	466	888	712

Several of the clubs, in answering the questionnaire, commented somewhat at length on the playing membership problem. These comments are as follows:

"It is my belief that the limit of club membership practical for an 18-hole course varies so greatly under different conditions that the only way to arrive at a correct adjustment is to start the membership low and work it up gradually to a point where the course may be comfortably filled, but not overcrowded. Our club is a country club with a resident membership of 350 and a total membership, of all classes, of between 450 and 500. While the bulk of the membership plays golf, there are also many who are interested only in tennis, riding, and social activities. With this membership constituted as it is, our 18-hole course is used nearly to the limit of comfort. On the other hand, the writer is familiar with another country club whose organization and interests are precisely similar to our own, but which has a membership of over 1,000 and whose course is no more crowded than our own. This latter club is situated in a more puritanical locality than our own and play is well distributed throughout the week. It seems to me that it is practically impossible to say what the golf-playing membership of any club really is, for the degree varies from those who play golf every day to members who play golf once or twice a year. I believe also that the location of a club and the quality of its membership has much to do with the case in point. Clubs which include in their membership a large proportion of men of leisure or those who have command of their own time are used constantly during the week, while clubs made up of active business men are apt to be crowded on Sunday and very little used during the week."

"We have six classes of active members, besides our honorary members. The active members are classed as follows:

"REGULAR MEMBERS.—Limited to 399 in number. Annual dues, $125. Full privileges to play golf at any time.

"CLUB MEMBERS.—At present limited to 75 in number. Annual dues,

$100. Privileged to play golf on any days except Saturdays, Sundays, and holidays.

"HOUSE MEMBERS.—Limited to 100 in number. Full privileges of the club house without any golfing privileges.

"NONRESIDENT MEMBERS.—Having their place of business or residence more than 100 miles from the club house. Annual dues, $50. Privileged to play golf at any time.

"ASSOCIATE MEMBERS.—Limited to 50 in number. Restricted to members' sons and daughters between 18 and 22 years of age, women over 21 years of age, clergymen, and officers of the Army and Navy. Annual dues, $50. At present privileged to play at any time but subject to future restrictions in case the board of governors decides that the course is too congested.

"JUNIOR MEMBERS.—Restricted to members' sons and daughters between 12 and 18 years of age. Annual dues, $20. Privileged to play golf on any days except Saturdays, Sundays, and holidays.

"The above plan in general was gradually developed in order to give more persons an opportunity to play golf and also to increase the revenue of the club and therefore to reduce the cost per member. It is our belief that an 18-hole course could accommodate this number of members subject to these restrictions even though the proportion of playing members is as great as it is at our club. With the use of starting time arranged for in advance at certain hours at the 1st and the 10th tees, both of which are near the club house, we have found that we can make provision for playing that is generally considered reasonably satisfactory.

"Another phase of the situation is this. The club and house memberships constitute a preferred waiting list to the full privileges of the regular membership. When a man applies for membership, if he resides in the district, his application is for house, club, and regular membership. He is first elected to house membership, and in due course is promoted to club membership, and then to regular membership. A few men, it is true, wish no more than house membership, and some wish to go no further than the club membership; but these are exceptional."

"I understand that what you want is a general reply, and that is all the questionnaire provides space for furnishing; but I believe that the problem needs some further elucidating and I would say that each club having a 9 or 18-hole golf course is more or less a law unto itself as to how many members it can accommodate, because the percentage of playing members will vary according to the individual club, and also the question of adjacency and accessibility has a strong bearing. In the case of a large city, like ours, if the club is 5 miles out it can not comfortably accommodate as many members as if it were 10, 20, or 30 miles out. The factors of distance and ease of accessibility make a big difference. If the club is close in, a man will play say three or four times a week; if it is far out he may just make it a week-end proposition or perhaps just once during ordinary week days.

"Our club has the most active daily attendance of any club in the state,

partly due to the fact that it has 36 holes, but, comparing it with 9- or 18-hole courses in the vicinity, it has a greater daily attendance on the course due to its being close in. Players can leave their offices down town in the long days of the summer anywhere between 3 and 5 o'clock, and play 18 holes before sundown. The result is, that a player who is a busy man can conveniently play three times during week days while he might be unable to play at all if the distance were 30 or 40 miles.

"Ordinarily speaking, the average club can accommodate somewhere between 300 and 400 members, depending on the percentage of active golfers in the club.

"The question of finance attaches to this subject, and in many cases is an inseparable one. It would be an ideal situation if the average golf club could maintain itself within the bounds of reason on a membership of 250, as this would make for greater freedom from congestion and for greater enjoyment; but few clubs can get along, particularly around large cities, where land values are high, except by charging very high annual dues or levying assessments. Frequently a club having an up-hill fight to maintain its existence on the basis of a reasonable charge for dues, would be able to get along in fine shape if it could add 50 or 75 more members. As before stated, the financial status of a club can not be overlooked in considering the question of total membership.

"The average age of the membership also has a bearing on this subject. If it has a high average age, the playing just naturally becomes less active. If it has a low average age, playing will be intensive.

"Around large cities this topic is a real live one, on which a book might be written for those thoughtfully inclined."

Dominion Reports Golf More Popular.— The following interesting news item has come to our attention: "Ottawa, Canada, June 7.—A report compiled by the Dominion of Canada Bureau of Statistics shows that on May 1, 292 golf clubs were flourishing, representing an outlay in property and equipment of nearly $10,000,000. The unusual popularity of the game is illustrated by figures which show that in 1916 there were only 76 golf courses in the Dominion. Last year there were 218, so that the increase since the first of the year has been 74. It is also interesting to note that 81 of the courses are 18-hole layouts, while 211 are 9-hole links."

Tiger-beetle harmless to turf.—Numerous holes about one-quarter inch in diameter have been noticed recently on putting greens in various parts of the country. Near the holes are small pellets of earth. Close examination has shown that some of these holes are occupied with the larvæ of the tiger-beetle. The tiger-beetle lives on other insects, but so far as known does no damage to vegetation.

Women's Amateur Golf Championship

The competition for the Women's Amateur Golf Championship of the United States, open to all Women Amateur Golfers belonging to Clubs which are members of the United States Golf Association, and to those foreigners visiting this country who may be invited by the Executive Committee of the Association, will be played on the course of the Westchester-Biltmore Country Club, Rye, New York, commencing on Monday, October 1st, when the Robert Cox Cup and four medals will be competed for under the Rules of the United States Golf Association.

The winner of the competition shall be the Champion Woman Amateur Golfer for the year and the Robert Cox Cup shall be held for that year by the Club from which the winner shall have entered.

The winner shall receive a gold medal.

The runner-up shall receive a silver medal.

The other semi-finalists shall receive bronze medals.

The competition shall be played in the following manner:

The contestants shall first play eighteen holes medal play.

The best thirty-two scores shall then be taken and the contestants making these scores shall then compete for the Championship. All match play rounds to be at 18 holes, except the final, which will be at 36 holes.

In the event of a tie or ties for the last place on Monday, the contestants so tied shall continue to play until one of them shall have gained a lead by strokes at any hole.

Competitors shall enter for the Championship through the Secretaries of their respective Clubs. An entrance fee of $5.00 must accompany each entry and must be received not later than 5 p. m. on Wednesday, September 19th, at 55 John Street, New York City.

Draw Checks to the Order of The United States Golf Association.

All entries are subject to the approval of the Executive Committee of this Association, and any entry may be rejected by the Committee. All disputes shall be settled by the Executive Committee of this Association, whose decision shall be final.

Any player who fails to appear at the tee within fifteen minutes of the time she is called to play by the Committee shall be disqualified unless reasons satisfactory to the officials in charge of the Tournament be given.

Any person paying her entrance money shall be considered thereby to have submitted herself to the Rules of the Association, both as to restrictions enjoined and penalties imposed. On these conditions alone she is entitled to enjoy all the privileges and advantages of the Association Competition.

Entries for the Special Events are opened only to contestants entered for the Championship Events.

This applies also to the entries of women in the Mixed Foursome Handicap.

All score cards in the Medal Play Rounds must be kept in strict accordance with "Rule 5, Special Rules for Stroke Competitions." Competitors failing to comply with the requirements of this Rule will be disqualified.

The privileges of the Club House and the Grounds are extended to all competitors in the Championship for one week previous to the Tournament.

The pairing and time of starting of each pair in the qualifying round will be announced through the press.

PROGRAMME

Monday, October 1. 10 a. m.—Medal Play Round, 18 holes, best 32 scores to qualify. A prize is offered by the Association for the lowest score in this competition.

Tuesday, October 2. 10 a. m.—Women's Championship First Match Play Round, 18 holes. 1.30 p. m.—Match Against Women's Par, 18 holes. Prize presented by the Westchester-Biltmore Country Club. Entries close for this event at 1 p. m.

Wednesday, October 3. 10 a. m.—Women's Championship, Second Match Play Round, 18 holes. 1.30 p. m.—Best Ball Foursome Scratch, 18 holes. Prize presented by the Westchester-Biltmore Country Club. Entries close for this event at 1 p. m.

Thursday, October 4. 10 a. m.—Women's Championship, Third Match Play Round, 18 holes. 1.30 p. m.—Mixed Foursome, Medal Play Handicap, 18 holes. Best gross and net prizes presented by the Westchester-Biltmore Country Club. Entries can be made at the time of the event.

Friday, October 5. 10 a. m.—Women's Championship, Semi-Final Match Play Round, 18 holes.

Saturday, October 6. 10 a. m.—Women's Championship, Final Match Play Round, 36 holes.

N. B.—Each entry for the Handicap Event must be accompanied by certified handicap at the player's home club, and the scratch score from which such handicap is made.

In all special events, players must leave the first tee by 3 p. m.

Cornelius S. Lee, Secretary,
55 John Street, New York City.

CHAMPIONSHIP COMMITTEE, 1923

Mr. Robert A. Gardner, Chairman, The Rookery, Chicago, Ill.; Mr. Edward S. Moore, New York, N. Y.; Mr. Thomas B. Paine, Atlanta, Ga.; Mr. Alan D. Wilson, Philadelphia, Pa.; Mr. Charles O. Pfeil, Memphis, Tenn.; Mr. Henry H. Wilder, Boston, Mass.

WOMEN'S TOURNAMENT COMMITTEE

Mrs. H. Arnold Jackson, Team Captain, Patterson Ave., Greenwich, Conn.; Mrs. David Gaut, Memphis, Tenn.; Mrs. Farlin H. Ball, Oak Park, Ill.; Mrs. Caleb F. Fox, Ogontz, Pa.; Mrs. Charles F. Rowley, Chestnut Hill, Mass.

NOTICE

In addition to the present qualifications, entries will be received only from women players having handicaps of 1 to 14. A consolidated list of the leading Women's Sectional Golf Associations in the United States, nominating such women players, will be issued September 1, 1923. Any player whose name does not appear on the present handicap lists and who desires to compete in the Championship, must submit to Mrs. H. Arnold Jackson, Patterson Avenue, Greenwich, Conn., before August 17, 1923, five best scores made during the current playing season over her club's course, duly certified to by the President or Secretary of her club, with a statement by the certifying officer of the par of such course. Upon the basis of the par and scores submitted, the player will be rated and notified at least one week prior to the Championship.

Control of Crawfish

We are indebted to Mr. C. K. Anderson, President of the Ridgemoor Country Club, Norwood Park, Illinois, for the following account of the successful control of crawfish by means of wire cloth buried underneath the turf, so as to prevent the crawfish from coming up from beneath and destroying the greens. Mr. Anderson informs us that the material used was 3 by 3 mesh No. 16-gauge wire cloth galvanized after weaving. It was employed by Mr. J. E. Millikin on a golf course at Orange, Texas. In a letter to Mr. Anderson, Mr. Millikin writes as follows: "This wire cloth will be placed 16 to 18 inches under the top of our greens and below the grass roots, and will extend under the bunkers bordering the greens, laid down the entire width or breadth of the green, lapped 2 inches and wired about every three feet to hold in place. Numerous other ideas have been tried to eliminate the crawfish, such as cinders, gravel, and iron chips, but the hardware cloth is about the only thing that the writer knows of which has proved successful. The crawfish, which builds his mounds so nicely after a heavy rain, is commonly known as a 'thunder crawfish.' Some are striped on the back, others red, and they vary in length from 1 to 1¾ inches. They create a large opening beneath the surface of the ground from 6 to 8 inches in diameter, varying in size from a quart measure to as large as the ordinary straw hat. These holes retain water except in extremely dry weather, and when it rains the crawfish enlarge their water lake, creating the mounds above the surface of the ground, and which no doubt you have often seen decorating the fairways and the greens of most southern golf courses. Our selection of the size of wire to use was based on what we thought would prove the least expensive in the long run and which would consistently answer our purpose."

In connection with this it is thought desirable to call attention also to other methods of exterminating crawfish. As the pest lives only in very wet soil, the logical remedy is good soil drainage, which has been found to be effective. Carbon disulfid is also very effective. This is best applied directly into the burrows by means of a long-nozzled oil can or kerosene can with a short nozzle. The hole in the nozzle in either case should be partially closed so as to allow the liquid to drop out slowly. Five or six drops of the liquid should be allowed to enter the burrow and the hole to the burrow immediately closed by stepping on it with the heel. It must be remembered that carbon disulfid is extremely inflammable and it should be used with as great care as is gasoline. It has also been reported that the crawfish may be destroyed by dropping a piece of calcium carbide down into the tunnel. The carbide unites with the water at the bottom of the hole, making a gas, which kills the animal. A couple of tablespoonfuls of gasoline dropped into each hole, and the hole immediately covered again with earth, is also said to be efficacious.

Applying ammonium sulfate.—The question is frequently asked as to what is the best way to apply ammonium sulfate. We have a method we are using that is both efficient and economical. Mix ten pounds of sulfate in a fifty-gallon barrel of water alongside the hydrant of your green. Make a T-shaped piece of pipe, connecting the straight line to the hydrant on one

side and the sprinkler at the other, using the down stroke of the T as a syphon with a short piece of hose to the barrel. We plug up the opening in the pipe to the barrel so that it is only about one-fourth the size of the hydrant opening. In this way we get ten pounds of sulfate on half a green, diluted in about 250 gallons of water. Move your sprinkler to the other half of your green, mix another ten pounds of ammonium sulfate in your barrel of water, and repeat the process. In this manner your green gets the fertilizer while being sprinkled without any extra work.—*H. P. Kidd, Wheatley Hills Golf Club, East Williston, Long Island, New York.*

Injecting Carbon Disulfid into Ant Holes.—Ants have bothered us very seriously on a number of our greens. I have tried almost every device to inject carbon disulfid into their holes but have not as yet found a satisfactory implement that is proof against spilling the poison and will not clog up while injecting the liquid. I finally fixed up a simple little device which works pretty well for us and may be of interest to readers of THE BULLETIN. I got a small rubber syringe which can be bought at any drug store for about 25 cents, not a pump syringe but a ball syringe. We first used this just as we bought it, but found that with the spout of the syringe as it was there was considerable danger of spilling poison on the grass around the hole and not getting the liquid directly into the hole. We found by taking an ordinary parlor match and sharpening one end to a point, running the blunt end into the spout of the syringe, which it just about fits, that we could inject the poison fairly rapidly without any danger of spilling, as the liquid runs down the match, which can be stuck into the ant hole. We inject possibly five or six drops into each ant hole, and cover as quickly as possible with moist soil. We tried oil cans with various-sized holes, but in every case found they clogged easily and a great deal of time was wasted in cleaning the outlet. An oil can with an outlet sufficiently large to avoid clogging spilled too much poison on the grass. Our arrangement is crude and we are not satisfied with it and would appreciate description of any device used elsewhere which is thought to be effective. Although this is the most satisfactory method we have found for treating ant tunnels with carbon disulfid, it does not by any means completely solve the ant problem, as where the ant nests are numerous the treating of each nest requires an enormous amount of time. When we treat one part of a green where the ant holes are numerous the next day there are just as many in some other part of the green. Carbon disulfid kills a good many of the ants but a great many escape coming up the hole as the liquid is dropped in, before the fumes have affected them.—*Thornton Conover, Tredyffrin Country Club, Paoli, Pa.*

(The Editors fully agree with Mr. Conover that the carbon disulfid method does not solve the ant problem and that the treating of each nest, which is necessary, requires an enormous amount of time. An entirely satisfactory means of ridding greens of ants is yet to be worked out. A suggestion might be added, however, and that is that some experimenters report that covering the hills and surrounding area with wet burlap sacks immediately after the application is made, is helpful in retaining the fumes in the tunnels for a longer period.)

Peat in California

Some of our California friends have written us insisting that peat is a valuable material in California, particularly to make stiff clay soils more friable. For such purpose one of them considers $10 a ton to be a reasonable price. The matter was submitted to Dr. C. B. Lipman, of the University of California, who writes as follows:

"I have your letter of April 16 relative to the value of peat as a fertilizer. From my experiments with peat, and I have made several, I am convinced that in California there is no more value to peat than you have found in the East. Some experiments which I hope to be able to publish this summer show that the availability of nitrogen in peat, even with unusual treatment of the peat, is extremely slow, so slow, in fact, that it gives very little improvement over controlled soil conditions where no treatment is given.

"Two dollars a ton, it seems to me, is entirely too high a figure to pay for peat in view of my experiments with it. As you say, in cases of heavy clay soils, there is unquestionably some advantage in mixing a light substance like peat with them in order to improve the drainage and other conditions, but it is questionable, and in fact very questionable, from my experience, if it would pay on any golf course to apply peat, or in the case of any other land which is growing crops."—*Charles B. Lipman, Professor of Plant Nutrition, University of California.*

An Appreciation from Abroad.—It is almost an every-day occurrence to receive with our morning mail an expression from one of our member-clubs of substantial help which we may have given them in connection with their turf problems. It is not often, however, that an appreciation of the work which the Green Section is doing comes to us from abroad. We therefore take delight in presenting to our readers some kind words from Mr. Harry Colt, who is generally recognized to be the foremost golf architect in Great Britain. In a letter dated July 19, 1923, Mr. Colt writes to Mr. J. Frederic Byers, President of the United States Golf Association, as follows: "I have been meaning to write and thank you very much for so kindly sending to me THE BULLETIN OF THE GREEN SECTION of your Association. Without any exaggeration, I have been extremely interested in the various articles, and especially in those referring to the vegetative planting of putting greens. This especially appeals to me, as I think that I can claim to have been the first to advocate the use of Agrostis grasses for putting greens in this country years ago. I heard of your present system of planting out stolons, and am thinking of taking it up in this country. Your Association is doing splendid work by means of your Green Section, and if I may be allowed to do so, I would like to congratulate you on the results."

The Green Section probably makes mistakes, as it is composed of ordinary mortals. It welcomes criticisms just as much—yes, even more— than it desires praise. Please write whenever you feel it is wrong.

New Member Clubs of the Green Section.—Mr. H. J. Lutcher Stark's Private Course, Orange, Texas; Kankakee (Ill.) Country Club; Briarcliff Country Club, Briarcliff Manor, N. Y.; Ridgewood Country Club, Danbury, Conn.; Coldwater (Mich.) Country Club.

New Member Clubs of the United States Golf Association.—Clubs recently elected to the active class include the following: Maplewood (N.J.) Country Club; Marion (Ohio) Country Club; Old Country Club, Flushing, L. I., N. Y.; Rockford (Ill.) Country Club; Silver Lake (Ohio) Country Club.

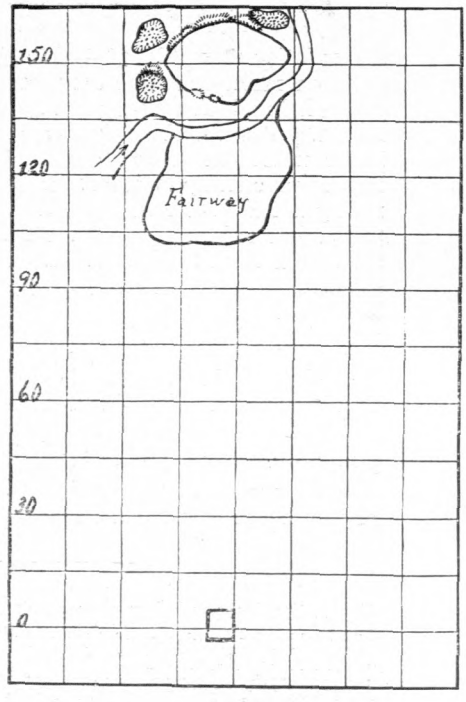
Clubs recently elected to the allied class include the following: Acacia Country Club, South Euclid, Ohio; Bellport (N.Y.) Country Club; Coldwater (Mich.) Country Club; Forest Park Country Club, Adams, Mass.; Harrisburg Park Golf Club, Harrisburg, Pa.; Hovenkoph Country Club, Suffern, N. Y.; Mason City (Ia.) Country Club; Reservation Golf Club, Mattapoisett, Mass.; Rivercrest Country Club, Fort Worth, Texas; Kettering Golf Club, Defiance, Ohio.

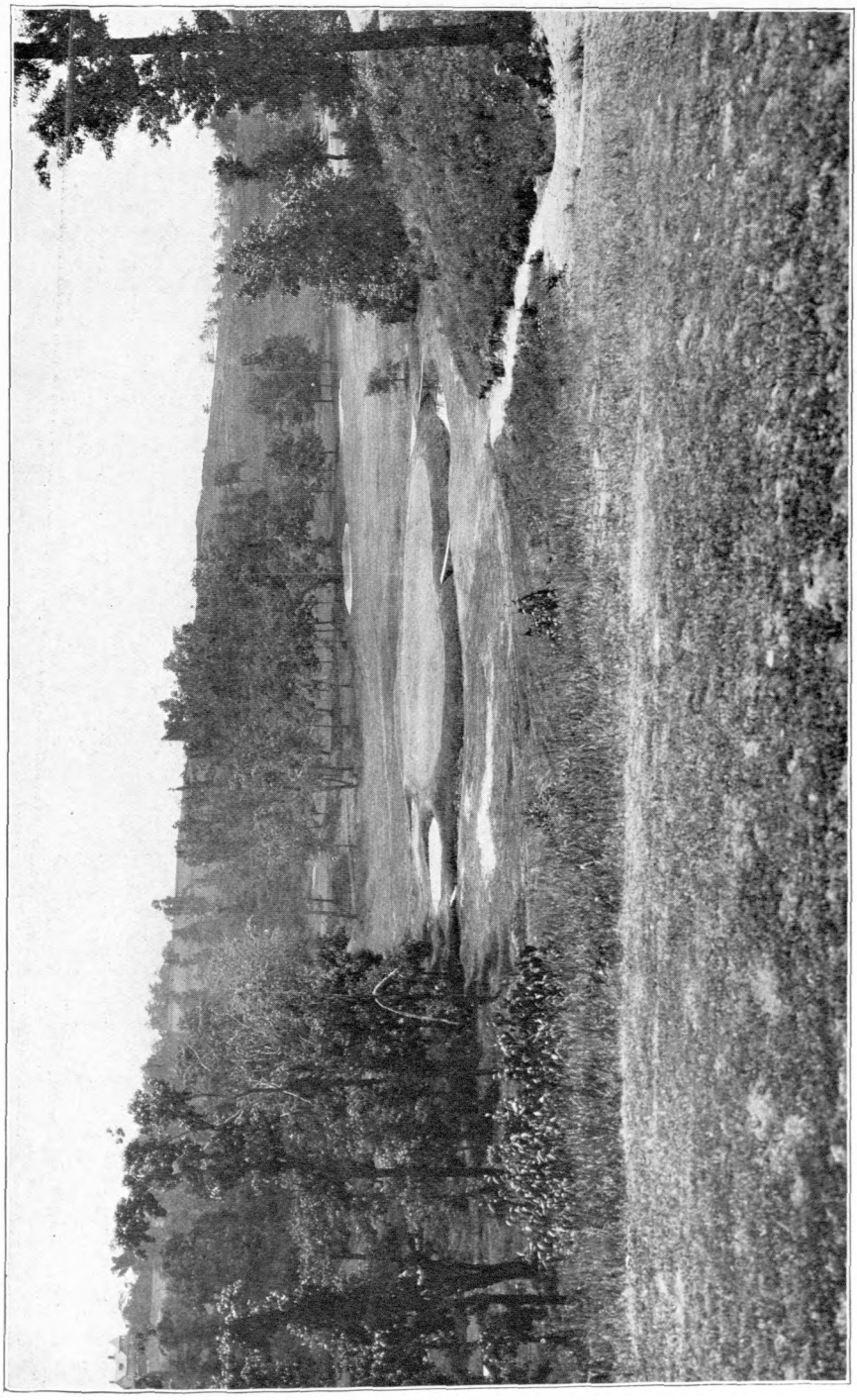
The Country Club of Rochester, and the Fresh Meadow Country Club of Jamaica, L. I., were transferred from allied to active membership.

Instructive Golf Holes III.

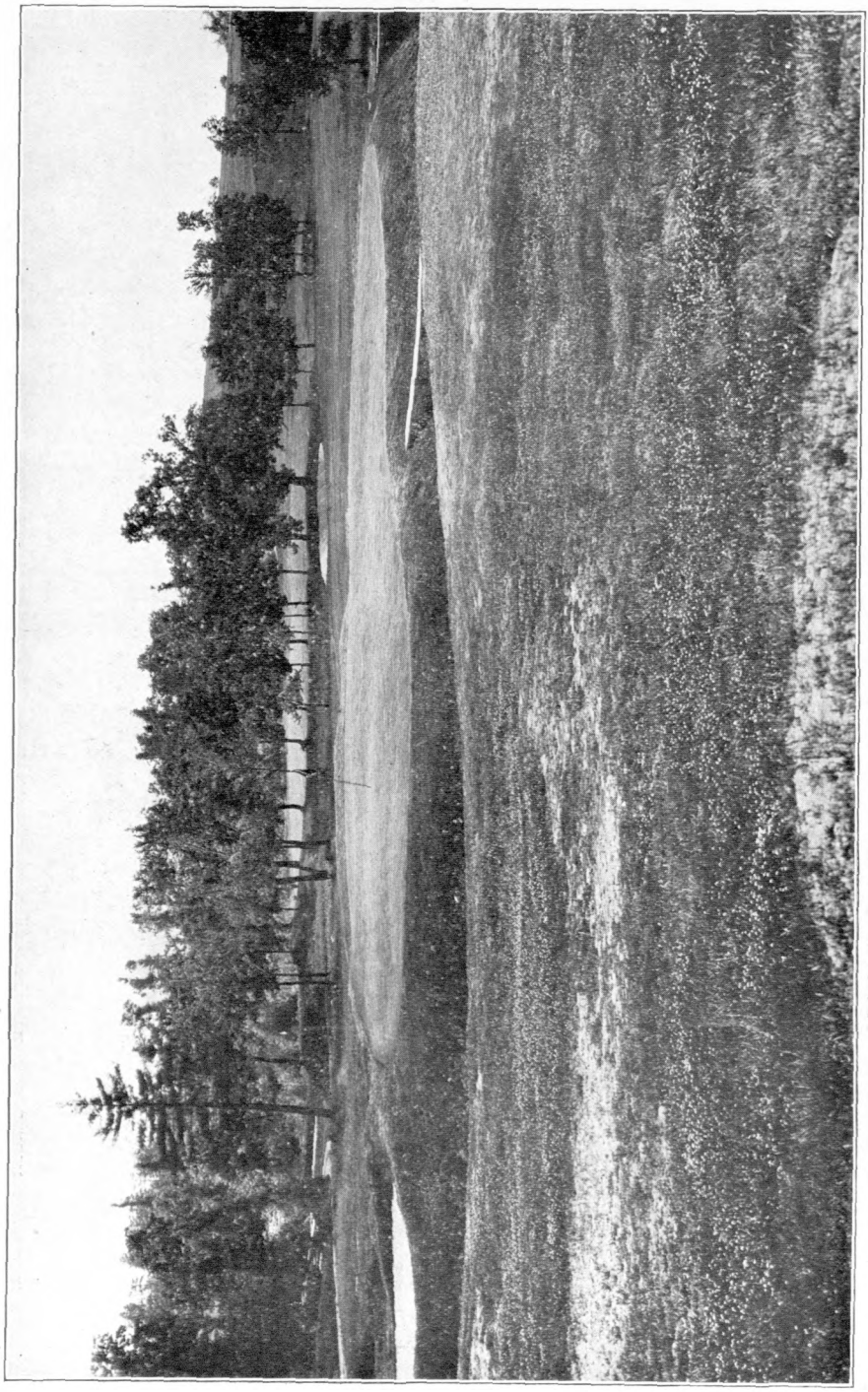
No. 6, Brae-Burn Country Club, West Newton, Massachusetts, 150 yards.

A tee high up on a hillside, a brook 40 feet below in a valley, a lovely green of velvet bent in an ox-bow bend of the brook, a background of beautiful trees—these are the outstanding features of Brae-Burn's number 6 hole. The brook is about 8 feet broad and the level of the green approximately 10 feet above the water level. It is safest, if one has driven into the brook, to drop the ball back on the fairway. The green is fairly large, about 6,000 square feet, measuring 96 feet on its long diameter and 80 feet on its short diameter. The back of the green is four or five feet higher than the rough behind.





Hole No. 6, Brae-Burn. View from tee.



Hole No. 6, Brae-Burn. Close-up view of putting green.

U. S. Golf Association Decisions on the Rules of Golf

Question.—A and B are playing a match. A claims the hole on B on account of B walking across his line of putt, claiming that an opponent in so doing could turn on his heel, which would affect his putt. Does this not come under etiquette? If there is any ruling on the same, please give the rule that covers.

Answer.—There is no rule nor is there any paragraph under the etiquette of golf that covers this situation. The game of golf is presumably a gentleman's game, and if B deliberately turned his heel in the line of A's putt he would violate one of the fundamentals of golf, which is that no player should take an undue advantage of his opponent. If B deliberately did attempt to injure the line of A's putt, he should be disqualified from any further competitions and suspended from the club. If, on the other hand, it was an accident and not intended in any way to take advantage of A, the matter should be treated as unintentional and A should remind him not to do it again.

Question.—A, B, and C and their partners tie for low gross in a two-ball mixed foursome on medal play score and arrange to play off the tie on 18 holes by playing a three-ball sixsome. In playing out of a sand trap adjacent to the green, B's ball hits A's caddy, who is standing at the pin. B and his partner dropped out before the round was finished, and A and his partner won from C and his partner by two strokes. The questions to be decided are (1) what penalty was incurred when B's ball hit A's caddy; and (2) has such penalty any effect on the match as between A and C?

Answer.—You did not state in your letter whether the ball played out of a sand trap adjacent to a green was within 20 yards of the hole or not. If it was within 20 yards of the hole, rule 13 under Special Rules for Stroke Competition applies. It would cost B's ball two strokes. If it was outside the area of yards from the hole, it would be a rub of the green under rule 10. The fact that B's ball hit A's caddy has no bearing whatever upon the medal scores of A and C.

QUESTIONS AND ANSWERS

All questions sent to the Green Committee will be answered as promptly as possible in a letter to the writer. The more interesting of these questions, with concise answers, will appear in this column each month. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Committee. While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

1. **Use of a sod nursery in establishing creeping bent greens.**—We are much interested in the vegetative method of propagating putting greens by planting bent stolons and have a promise from a dealer to supply us with 60 bushels of stolons, which we intend to use as soon as we receive them. In conferring with

some of the members of our green committee it has been suggested that instead of planting these in the intended greens that they be planted in a temporary green, every preparation being made in the temporary green to receive the same treatment as if it were a permanent one, and growing sod on the temporary green and when fully developed to transfer the sod to the regular green. In this way it would put the regular green out of commission only for a few days during the period of sodding rather than for the balance of the season by planting the stolons. It is further thought by some of the members of the committee that these 60 bushels of stolons would likely grow enough sod for several greens, whereas if they were sown on the regular green they would only answer for the one. What would you advise our doing in the matter? (Kentucky.)

Either method should prove satisfactory. If you decide to plant the runners on an area for producing sod to be transferred to a green later, we would suggest that you give this area the same preparation that you would give a green—that is, prepare the ground properly as for an original seeding. If the runners are of a strain of bent grass that is desirable and if they are planted properly—that is, in accordance with the method outlined in the April number of the BULLETIN—they should make turf that can be moved early next fall. This method has been used by others very successfully. We know of an instance where an acre of bent was planted as late as the latter part of May and the sod was ready to move by the first of September. However, spring planting is not as desirable as fall planting; so plant your area as soon as it can be planted, but hardly later than September 15. With ordinarily favorable conditions you should be able to transfer the sod by the first of July of next year. Our advice to you would be to plant the stolons as thickly as suggested in the articles in the BULLETIN referred to. You could of course plant them much more thinly than this and by proper care would get perfectly good turf, but it would require longer time than if planted at the rate recommended.

2. **Correcting injury caused by excessive use of commercial "humus."**—We are thoroughly satisfied that a large part of our trouble is caused by the use of commercial humus. We used about 20 yards to a green. If this condition which exists with us is caused by the commercial humus, do you think it will be possible for us on the greens that are holding up better, to improve their condition by top-dressing heavily with good compost and disking with a small putting green cultivator? We know you do not advocate disking generally, but under these circumstances would it not help? The one thing that convinces us that the commercial humus is the cause of our trouble is that the greens that are the worst are the ones in which a maximum amount of humus was incorporated when the construction work was done. On the other side of the course we luckily ran short of the material and consequently "slighted" them somewhat, and these greens are acting much better than the others. We have top-dressed them regularly, every month or so, for the past two years, with the result that we have built them up on top with a good compost, quite a little bit. Would this in time help them, or do you think we will have to work the soil in the top four or five inches, which includes the humus? (Indiana.)

We note you are convinced that "humus" is largely the cause of your difficulty. We feel quite sure that this is the case and would advise you to apply to these greens liberal dressings of good compost. As for disking compost into the surface soil, we do not ordinarily advise this practice for the reason that disking is severe on existing turf, but in the case of your greens it is probable that disking would help. It is our understanding that it is your intention to sow bent seed with the compost. If so, it is quite

probable that you will obtain material improvement in your greens by the method you have in mind. If liberal treatment with compost such as you have outlined does not produce results, the only thing we can suggest is that you revamp the greens next year—that is, remove most of the surface and resurface them. Our opinion is that systematic compost dressings will ultimately bring you the desired results.

3. **Controlling the Japanese beetle.**—The Japanese beetles have just appeared on our course. What are the best methods of combating the pest? (Pennsylvania.)

The best remedy that we know of is that described on page 173 of Volume III of the BULLETIN. This treatment is, of course, not used until the larvæ are found working beneath the sod. The adult beetles are active from June to October and during this time feed on a great variety of plants—mostly tall growing weeds and trees—over 210 species having thus far been recorded. Beginning in early summer the females lay their eggs in the soil. In turf these grubs work just beneath the turf, and their presence is usually first indicated by injury to the turf becoming evident. If lifting of the turf discloses the presence of the grubs they can then be destroyed by the method referred to above. So far as orchard trees and other cultivated plants are concerned, more or less success has been obtained by the spraying of arsenicals, but this seems scarcely practical for golf courses, as the beetles feed on so many different kinds of trees.

4. **Selecting creeping bent stolons for vegetative propagation.**—We are tearing up three of our greens this fall and intend to plant chopped bent stolons, of which material we have quite a quantity on our course. We are sending you a sample of these stolons. Would you advise our using these stolons for the planting of greens? (Ohio.)

It is a little difficult to tell from the specimens you submit whether they will make satisfactory turf. They produce vigorous stolons, but we are somewhat inclined to think from the appearance of the specimens that the turf they would make would not be as close and thick as is desired. We should like to have you try the vegetative method and are inclined to advise you to plant one green with the material you have at hand. There are many strains of creeping bent, as you doubtless know, and some of them are not satisfactory for putting green turf. We have found from experience that it is a little difficult to tell from the appearance of a strain with which we are not entirely familiar whether it will be suitable or not. For this reason we hesitate in advising you to go ahead with your program of planting two or more greens. We would say, however, that of all the strains we have tried there has not been one but that has produced turf which is superior to that produced from the average seeding. Therefore we do not know that after all you will lose much by planting the stolons as represented by the specimens you sent us. You should read carefully the instructions given in the April number of THE BULLETIN with regard to the propagation of putting greens by the vegetative method. The subject is discussed in detail in that number.

5. **Inserting bent stolons in turf not out of play.**—One of our friends is seeking information in regard to creeping bent greens which he is anxious to see installed at his club. He has the idea that the greens can be gradually converted into bent greens and says that their idea is to do this without putting the greens out of play. He seems to think it can be done by cutting into the turf with a spade and laying in stolons and then tramping back the turf, thinking the stolons

will vegetate and in the course of a year take the place of the existing turf, doing this over each green in rows 6 inches apart. We told him this would be a slow process, and that it would be quicker to strip their greens and plant the stolons now so that they would get a good start this year during the good growing weather of August and September and be ready for play next spring. He said, however, that their members would not stand for having the greens out of play, particularly as they had some of them out of play for some time owing to unsatisfactory turf. Will you kindly let us know if his idea is practical, and if so, what is the best method to pursue? If the method is not practical, what can be done to convert the greens to creeping bent without putting the greens out of play? (New York.)

We have had very excellent success with the dibbling into turf of stolons in our experimental work, but have not tried it on an area as large as a putting green. We use small pieces of stolons and dibble them in by means of an old file knife, which is not unlike a trowel except that it is not a three-cornered tool. We do not know what to advise you in this matter, but would like to see some one give the method a thorough trial on a putting green. Ordinarily, of course, it would be better, if planting material were available, to strip the green and plant it by the vegetative method described in the April (1923) number of THE BULLETIN. If planted now (August 22) the green should be ready for play, if properly treated, by next spring. However, bent runners can be dibbled into a green without putting the green out of play.

6. **Injury from an excessive amount of humus in the surface soil; fertilizing with ammonium sulfate.**—Our putting greens hold out good until the month of July, at which time they begin to thin out, nothing being left with the exception of the New Zealand red fescue, which does not seem to thrive as it should. Our greens are large, with a prepared top soil composed of 20 per cent "humus," 20 per cent sharp sand, and 60 per cent good loam. We fertilize mostly with sulfate of ammonia, beginning in April with 25 pounds of sulfate of ammonia to 1,000 square yards. We make our last application the first part of June. The fescue in spots seems to die out and it does not appeer to be brown-patch, as the shape of the diseased portions is too irregular. Will you kindly advise us what is causing this damage to our greens? (Ohio.)

We are inclined to think that part of your difficulty may be due to the fact that the surface soil contains a considerable proportion of so-called humus. This material has given trouble in many cases elsewhere, and it may be the partial cause of your difficulty. As for your system of fertilizing, it seems to be satisfactory. We use ammonium sulfate quite liberally. In the spring we use as high as 3 pounds to 1,000 square feet, but in the summer we apply not more than 1 pound to 1,000 square feet and are very careful in making applications. Summer applications, unless handled carefully, will scorch the grass. You state that the fescue in spots in your putting greens dies out and that the injury does not resemble that caused by brown patch in the matter of shape. In this connection we would say that we have observed brown-patch to work in a very irregular pattern so that it can scarcely be called a patch, but in most cases the pattern is circular and well defined. Just why it works irregularly while in the majority of cases it works in a regular pattern is hard to understand.

7. **Attempts to obtain creeping bent from German bent seed.**—We bought 100 pounds of German bent seed under a strong guarantee and recommendation, but to those who have examined the grass produced they say it is not German bent. We are sending you samples marked "No. 1" and "No. 2" of plants

grown from this seed, which we would like to have you identify for us. We paid a fancy price for the seed, and there appear to be no creeping tendencies to the grass; it comes up in the same manner as other grasses and does not spread or cover over the ground as bents are supposed to do. (Wisconsin.)

Your envelope marked "Specimen No. 1" contains plants of velvet bent. There is approximately 15 per cent of velvet bent seed in all true German mixed bent seed. Therefore, we are inclined to think that the seed you obtained is true German mixed bent seed. There is about 85 per cent of seed in German mixed bent which is of the same species as the grass we know as Rhode Island bent. Your specimen No. 2 is of that species. There is only a mere trace of true creeping bent seed in German mixed bent seed. The trade name "creeping bent," which is a misnomer, has been used in connection with the mixed bent seed for years and is only just now falling into disuse. Rhode Island bent, as above mentioned, makes up a large part of German mixed bent seed. It is not a creeping grass in the sense that creeping bent is a creeping grass. It spreads, however, and makes an excellent turf and is regarded as highly satisfactory.

8. **The nursery row in vegetative propagation of creeping bent.**—By splitting in half nursery rows as they are now growing and leaving half to continue to grow, would that be as well as to take the whole row? It has occurred to us that if left in part they could continue to accumulate, and the half taken up we could plant. Is there any objection to that idea, or would you advise our taking all of each row as far as needed? (Wisconsin.)

As for leaving half the row to continue to grow (we presume for next season) we would suggest that you do not do this. We find it unprofitable. For best results a nursery should be planted each season from stolons in the manner of the original planting. The bents do not spread well from old rows. Please note the articles in the April number of THE BULLETIN OF THE GREEN SECTION on vegetative planting. They will give you a very good idea of the method from start to finish.

9. **Mushroom soil as a top-dressing.**—Is it advisable to use mushroom soil as a top-dressing for bent greens in place of the regular compost dressing? (New Jersey.)

As a top-dressing for bent greens, mushroom soil is very satisfactory, but we prefer to use it mixed with good loam or loam and sand. Mushroom soil frequently contains large amounts of clay and therefore is improved by the addition of sand. As a general formula for compost for top-dressing bent greens we advise the following: One-third good top soil, one-third mushroom soil or similar organic matter, and one-third sand, well mixed, screened, and scattered evenly over the green, after which it should be brushed in with a rake, wire mat, or a coarse stable or street brush.

10. **Colonial bent seed as a substitute for German mixed bent seed.**—In view of the exceedingly great difficulty of getting German mixed bent seed at the present time would it be advisable to attempt to use Colonial bent as a substitute? (Pennsylvania.)

Colonial bent would be a very satisfactory substitute. In fact, German mixed bent seed contains approximately 85 per cent of seed of the same species as Colonial bent. Colonial bent and Rhode Island bent are identical, except that Colonial bent seed is harvested in New Zealand and Rhode Island bent seed in New England.

Meditations of a Peripatetic Golfer

Moss on the fairways. This is almost a sure sign that fertilizer is needed.

For a new golf course the most important thing is to get the best possible layout on its land. This requires a lot of time and study, but it is worth the expense. Any single hole can be changed without much difficulty, but to change a whole layout is so costly that it is rarely done. The service the architect renders in determining the best possible layout is the most important service he can render the club.

Crested dog's-tail on a green is likely to make a putted ball jump. True. But no one has yet seen crested dog's-tail on any American putting green.

It is very difficult to grow good grass on a putting green in a seepage basin. In such a place artificial drainage must be provided. Usually it is better to relocate the green.

Fairways mowed in perfectly straight lines. They are not nearly so pretty as those cut in sweeping sinuous curves.

Crab grass on a green in summer time is like interest on borrowed money; "the more it eats the hungrier it gets."

Greenkeeping maxims:

Never put off until tomorrow what should be done today.

Remember, whatever is worth doing on a golf course is worth doing well.

Ignorance and indolence have no place on golf courses of today.

A green with small choppy undulations. Better make them broad and sweeping in contour.

Places to avoid include ponds, rough grass, bunkers, and sand wastes. Don't make all of your difficulties in the form of bunkers—that is, depressions with sand. A variety of difficulties increase interest and make more demand on skill.

Scotch broom scattered about a golf course. It adds what the artist calls atmosphere.

A hole that must be approached directly up a steep ridge of hill is usually a poor hole. It should go up the ridge diagonally to secure visibility.

When your fairways begins to look weak, get busy with fertilizers. Top-dressing weak places is always good practice.

Winterkilling in the low places and in saucer-like concavities. The drainage problem is far from solved on many, many golf courses.

Pearlwort again. Destroy the first few plants or it is very likely to get beyond control except at very great expense.

An impressive bunker is a good bunker. To be impressive it must be visible.

Copying a good hole is commendable. But do not imitate its faults.

A green cut into the face of a steep hill. Of course the boys play for the slope above and let the ball trickle back.